

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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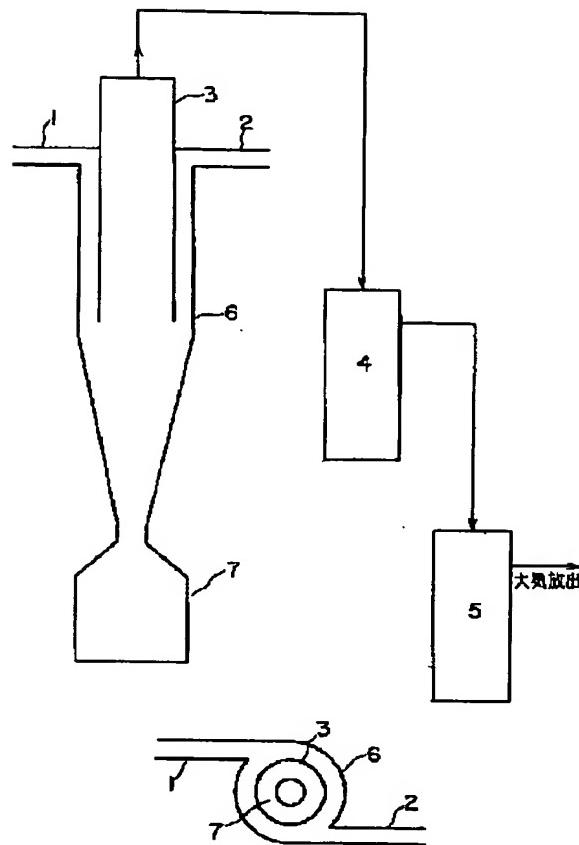
APPLICATION DATE : 22-10-91  
APPLICATION NUMBER : 03274206

APPLICANT : ONODA CEMENT CO LTD;

INVENTOR : KURODA TAKESHI;

INT.CL. : C01B 21/083

TITLE : PRODUCTION OF NITROGEN  
TRIFLUORIDE



ABSTRACT : PURPOSE: To improve reaction efficiency, yield or the like by allowing a gaseous starting material to flow along the inner wall of a reactor in helical form to mix and allow to react when producing nitrogen trifluoride by reacting fluorine gas with ammonia gas in vapor phase.

CONSTITUTION: The raw material blowing pipes 1 and 2 are connected to the reactor 6 so as to enable the gaseous starting material to blow in tangential direction of the cylindrical part of the reactor 6, and ammonia gas and fluorine gas, if necessary adjusted their conc. with a dilution gas, are injected into the reactor 6 from the raw material blowing pipes 1 and 2, are allowed to flow along the inner wall of the reactor 6 in helical form in the inside of the reactor 6 and are sufficiently mixed to allow to react. Next, the reacted gas is drawn out from the formed gas draw-out pipe 3 and is introduced into the gas scrubber 4 to clean, and then, formed nitrogen trifluoride is recovered by the recovering device 5. A solid part of the by-product is stored in the storage vessel 7. As a result, the gaseous starting material is sufficiently mixed and clogging of the reactor and pipe line is eliminated.

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